

12. Medical Missions in India are making a large contribution towards the relief of sickness throughout the country. They possess many efficient hospitals, 176 in all, and are sharing with Government in the care of the sick womanhood, in maternity service and the training of Indian nurses.

They possess the largest and most efficient Tuberculosis Sanatorium in India and their surgical service has been notable in its contribution towards the relief of surgical ailments.

They have extended their institutions in the neglected rural areas. They are participating in medical education and possess three medical schools, two of these for women. Their services are greatly appreciated by the populace and highly acceptable to the British Government of India, both in British territory and the Indian States.

13. The Government of India conducts a popular and efficient system of medical education but a modified plan for medical relief whereby practitioners may be persuaded to reside more largely in the rural areas, is urgently needed.

Dr. R. H. H. Goheen, of Vengurla, has recently made an extended tour throughout India as a member of a survey committee on medical mission institutions, appointed by the National Christian Council of India. I wish to express my indebtedness to Dr. Goheen and his committee for much of the material I have used in the preparation of this paper.

DISCUSSION

EDWARD H. HUME: It is a great pleasure to be with you this evening when Sir William has given this very important paper on present day medicine in India. My own experience in India began in the Bombay Presidency. I should like to mention the peculiar circumstance that there should be four men coming to this single section to-night who are able to speak a common tongue. Sir William, Dr. Goheen, Dr. Vail and myself have all worked in the same section of India and speak one language.

I wish it were possible, if we had the time to-night, to supplement Sir William's paper by pointing out the part he has played in bringing about the changes in methods of practice and the establishment of medical education of India. It was my privilege to be in the Miraj Hospital which he established, and to see what the establishment of this hospital has meant to the city and entire country-side. Everywhere you go in India, if you say "Miraj," it means "Wanless," and the other way around, "Wanless" means "Miraj." It is important that we bear in mind that the man who speaks so well of the present day practice of medicine in India, has himself played a very important part in the improvements which have been going on.

I have only a little time but I should like to say a few words about the India to which Sir William first went, and the practice of medicine there at that time and before.

As in the case of China, Indian medicine is very old. We have on record sacred books reaching back to 1500 B. C. We know that in the Orient, surgery was more highly developed in India than in any other country. The period of Brahman control, about 1000 to 800 B. C., was a period in which great progress was made in the methods of practice of medicine. It was then that the great figure of Ashoka lived. He is one of the six great figures of history, chosen by H. G. Wells (in his Outline of History) to represent that era, about 22 B. C. From his writings, it becomes clear that hospitals were founded by him, of a crude sort undoubtedly, but nevertheless they represented the beginning of the practice of medicine.

In the period of the fifth century A. D., we see Susrada, whose writings are a great storehouse of Indian surgery. Anatomy was being developed. To be sure, they gave fanciful names to anatomical structures and counted exact numbers of ligaments, nerves, etc., which are found in the human body. Still this marked the beginning of the conception of medicine as based upon anatomy. Similarly with physiology, they stated that there were seven cardinal

principles, and health consisted in a suitable proportion of these principles, and disease in a disproportion or break-up of the normal relationship.

Back in this fifth century A. D., Susrada's descriptions quite clearly give us a forecast of the relationship of malaria to the mosquito. That is worth bearing in mind. In other books there are warnings in this kind: "When rats shall fall from the ceiling and jump about and die, let the population beware and run away from the building." It is amazing to realize that hundreds of years before the development of the science of bacteriology and before the existence of bacteria was even guessed at, the foreshadowings of later days were seen by these men.

Indian therapeutics, like therapeutics in any other Oriental country, ranged from the days of spirits, when the gods did everything, down to the use of plants, of which thousands are described in the *materia medica*. Even more important is it that throughout this fifth century, medical writings included such subjects as diet, baths, inhalations, gargles, blood-letting, and urethral and vaginal injections. At least there was a beginning of progress, and we must remember that this had in it elements which have in their development had a great deal to do in pointing the way to modern developments to come.

I only spoke of this because I feel it so important to say once more to Sir William and to this audience, that we should be very grateful for Sir William's presence to-night, and should realize the share which he has had in bringing about the medicine in India to-day.

R. H. H. GOHEEN: I feel very much as Dr. Hume does, that it is quite unnecessary to add to what Sir William has said about present day conditions in India. Yet, having faced the situation in different parts of India for many years, I have in mind some things Sir William mentioned but did not particularly stress, and about which I should like to say a few words.

The work done at the Calcutta School of Tropical Medicine deserves high praise. The men working there have achieved great things. There is Sir Leonard Rogers, who gave us emetine which is a wonderful aid in the treatment of amoebic dysentery and amoebic abscesses. He also has helped in working out the modern treatment of leprosy. He and his assistant have developed the use of potassium iodide in large doses. This drug is not at all tolerated by the patient in the later stages of the disease. However, in the early stages, where there is a suspicious patch, if this spot is touched with potassium iodide, there is no reaction if it is not leprosy and a reaction if it is. And so on.

I want to mention in particular that very important disease, malaria, recognized by the Calcutta school as one of the most serious problems in India to-day. Sir Roland has proved that the anopheles mosquito transmits malaria, a very important proof indeed. In the last census, as Sir William pointed out to-night, it was found that about fifty million people died of malaria and kindred fevers in India every year. As he showed too, it is very difficult to obtain accurate figures in the remote villages, where all febrile conditions are classified as "fever." However, no other condition, except kala-azar which is not common, resembles malaria. Therefore it must be assumed that the majority of deaths included in this group of fifty million are truly malaria.

I also wish to say a few words further about tuberculosis. Sir William has given us the figures for Calcutta last year. While I was in charge of a tuberculosis sanatorium, I was asked to come up and talk to the Tuberculosis Association of Calcutta. We found that this disease has been increased in India in the past ten years by seventy-seven per cent, or over seven per cent per year. The only institution for combating the disease in Calcutta is a small dispensary started by an American woman, who had had experience in France during the war and in the rehabilitation of France subsequently. Her attention was drawn to

the conditions existing in Calcutta, and she started this dispensary.

Sir William's report is very important, because it draws attention to the prevalence of this disease. I really believe that the figures given are much too modest and that the disease is even more widespread. There is not one single sanatorium, apart from one having six beds and calling itself a sanatorium, in the whole of Calcutta. The only hopeful sign I see, is the establishment of a sanatorium on the outskirts of Calcutta which will have thirty beds, and which has already been started. The total bed capacity of all tuberculosis sanatoria in India does not equal that of the Municipal sanatorium in Chicago.

Add to the above what Colonel MacFerson told me last year, that the ratio of tuberculosis in the United Provinces is over seven thousand per one hundred thousand of population, as against nine hundred in the city of London. The increase in the disease is at the same rate in Bombay as in Calcutta, namely seven per cent per year. So that you can see that tuberculosis is another disease which must be very seriously considered in India to-day.

In conclusion, I should like to mention one more disease—carcinoma. In tropical countries, where people are largely by choice or force of circumstances, vegetarians, we would think carcinoma less prevalent than in the western countries. We were led to study the incidence of carcinoma among our own hospital patients, and found that among a total number of one thousand cases treated, the incidence of carcinoma was 2.88 or approximately 2.9. Figures given me for the Miraj Hospital were 3.19 or approximately 3.2, while Dr. Hume has given me the figures for the Post Graduate Hospital in New York. They were 3.2, 3.3, and 3.4, for the years 1926, 1927 and 1928. You can see, therefore, that there is very little difference. As you probably know there are certain areas in India where carcinoma of the cheek and mouth is extremely common due to the practice of chewing betel nuts; while in other dis-

tricts there is a different type due to excessive beating of the hips.

That is all I have to say to-night.

C. E. VAIL: Like Dr. Hume, I feel that I should spend my time to-night in speaking of Sir William, who is, of course, so much nearer to us in India. He has done a great work out there, and it has been my good fortune to be under his training. I do not wish to add anything to his comprehensive paper on present day medicine in India, but I should like to say a few more words on the subject of leprosy.

The treatment of this disease has been transformed in India during the last five years. To you, who rarely see a case of leprosy, it is a different proposition, than to one who sees a clinic every two or three days, in which there are four or five new cases not yet diagnosed. In former days we approached the problem of treatment of the leper as hopeless. While, during the past five years, we have cured more cases than in the previous twenty years.

Now, when we see a leper, we look on him in a different light. If he is an early case, we expect to cure him. You can understand the difference this makes to the leper himself. He formerly came to us, if he came at all, as an out-cast, a man with no hope of cure. Now he comes to us for treatment, and not for isolation. So, in the near future we expect to know approximately how many lepers there are in India to-day. Now we are simply guessing, as Sir William pointed out. Probably there are five hundred thousand to one million lepers in India to-day, as estimated by Dr. Muir.

The reason for this guessing as to the number of lepers in India to-day, is that they are buried in the remote Indian villages where we cannot reach them. Now Dr. Muir comes to us and says the solution of this problem is to form centers for propaganda, survey, diagnosis and treatment. I think it is a great tribute to the insight and forethought

of Sir William Wanless that this is the system in use in the Miraj field.

We have five dispensaries in the outlying districts, with a graduate of the Medical School in charge of each dispensary. We coöperate with the Imperial Leprosy Relief Association of India, by sending our men to Dr. Muir for training, and having as assistants men trained by them so as to carry out intensive treatment, with the hope of curing the leper.

So I would like you to look into the future of medicine in India with the hope that leprosy will be eradicated.